

ABSTRACT OF THE DISCLOSURE

A image intensifier tube (14) includes a housing (18) carrying a photocathode (22) and a microchannel plate (24). The housing also receives axially extending fine-dimension spacing structure (22a) interposed around an active area 22b of the photocathode and the microchannel plate to establish and maintain a selected fine-dimension, precise PC-to-MCP spacing between these structures. The housing includes yieldable deformable electrical contact structure (56') for establishing and maintaining contact with the microchannel plate, and yieldable deformable sealing structure (58) allowing axial movement of the photocathode relative to the housing structure as the tube is assembled and the axial spacing structure controls PC-to-MCP spacing. The result is that the PC-to-MCP spacing dimension of the tube is largely isolated from dimensional variabilities of the housing and is established and maintained precisely during manufacturing of the tube despite stack up of tolerances for the housing and its components.